

## Attitudes and Experiences of Frontline Nursing Home Staff Towards Coronavirus Testing

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Brief summary: The Indiana State Department of Health tested nursing home staff for COVID-19 in June 2020. A survey of staff found many felt physical discomfort, some questioned testing the asymptomatic, but a majority agreed testing is important.

## 1    **Background**

2            Nursing home (NH) residents are particularly vulnerable to contracting COVID-19 due to  
3    congregate living and need for personal care. They are also more at risk for adverse outcomes  
4    due to advanced age and medical comorbidities.<sup>1,2</sup> The Centers for Medicare and Medicaid  
5    Services (CMS) has issued multiple guidelines to prevent the spread of COVID-19 and reduce  
6    mortality in NHs including caregivers use of personal protective equipment, resident cohorting,  
7    suspending visitation, and ongoing testing of staff.<sup>3</sup>

8            The Indiana State Department of Health (ISDH) conducted statewide NH staff testing in  
9    June 2020.<sup>4</sup> This effort represented significant investment of resources with logistical  
10   challenges that required NH staff cooperation. Nationally, NH staff will continue to be regularly  
11   tested for COVID-19, yet we know little about the staff perspective on testing. We surveyed NH  
12   staff following Indiana's statewide testing effort to assess attitudes and beliefs about  
13   mandatory COVID-19 testing and vaccination.

## 14   **Methods**

15           Testing occurred June 1-30, 2020. Facilities either had ISDH staff test on-site or kits were  
16   distributed to test staff within 24 hours. Samples were collected via nasopharyngeal or interior  
17   nares swabs for a polymerase chain reaction (PCR)-based COVID-19 test. A total of 47,277 staff  
18   registered for testing and 28% had unique email addresses. After excluding staff aged <18  
19   years, 18,802 staff formed the sampling frame. A geographically diverse random sample of  
20   4,296 were invited to complete a 19-item online questionnaire developed by the investigators.  
21   The study was approved by the Indiana University Institutional Review Board.

## Results

Overall, 242 (5.6%) staff responded to the survey. Respondent demographics and responses to key questions are in Table 1. Most (n=167, 69.0%) had no concerns about regular COVID-19 testing and believed testing was “easy” (n=148, 61.2%), though 50.4% (n=122) noted testing was “uncomfortable.” Potential barriers to ongoing testing if done outside the workplace included time (n=135, 55.8%) and cost (n=106, 43.8%). Among respondents who did not see the importance of regular testing (n=54, 22.3%), free-text answers anecdotally suggested belief that testing asymptomatic staff has little value if staff are correctly following infection protocols. Many staff have concerns about vaccines, with 26.5% (n=64) stating they would wait to be vaccinated, and 17.8% (n=43) unsure of whether they will agree to vaccination once available, and 12.4% (n=30) will refuse vaccination outright.

## Discussion

Our survey of NH staff demonstrates that a majority of NH staff are willing to undergo regular COVID-19 testing, but one in four had concerns or questioned the importance. Recent CMS guidelines specify NH staff must be tested at least monthly, and more often in areas with high levels of community COVID-19 activity, with facilities penalized for noncompliance.<sup>5</sup> Without facility-based testing, staff face barriers such as time and cost to getting tested, thus underscoring the importance of providing workplace testing. Although CMS has begun distributing point-of-care antigen testing machines, concerns about the accuracy and availability and cost of test supplies remain.<sup>6</sup>

Some staff expressed beliefs that asymptomatic testing of staff is not important. Notably, 29.6% (n=8) of administrators noted ongoing testing was not important compared to 21.6% (n=24) of clinical staff. Any division between staff and administrators could result in testing noncompliance, and failure to identify asymptomatic staff could have significant consequences for residents.<sup>7</sup> Coupling education with mandatory staff testing as a condition of employment and in-facility, less-invasive testing methods (i.e.-nasal swabs or saliva vs. nasopharyngeal swabs) may ensure compliance. Answers varied among staff positions with future vaccine uptake, 3.7% (n=1) of administrators will not get vaccinated compared to 15.3% (n=17) of clinical staff. As noted by our results, when a vaccine is available, assurances of safety and efficacy will be necessary for NH staff uptake. Prior research has noted NH staff have poorer influenza vaccination rates compared to other health care workers.<sup>8</sup> Thus, if a safe and effective vaccine becomes available, significant resources and strategy will likely be needed to promote uptake among NH staff.<sup>9</sup>

Limitations include a low response rate (5.6%), however, the distribution of respondents versus non-respondents did not differ by race, ethnicity, or urbanicity; CNAs were underrepresented (16.5% responding vs. 27.5% overall). Despite a low response rate, these data have value in understanding the experiences and attitudes of NH staff about COVID-19 testing, and potential vaccination. Federal and state officials and industry leaders have been grappling with the best approaches to ongoing testing during this pandemic, weighing likelihood of benefit with cost and supply issues. The attitudes and beliefs of staff, who provide the day-to-day care for NH residents, are key to understanding strategies required for successful implementation of ongoing testing programs.



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104 **Table 1:** Nursing home staff demographics, attitudes, and experiences with COVID-19 testing.

	Overall (N=242)	Clinical Staff <sup>1</sup> (n=111)	Administration (n=27)	Support Staff <sup>2</sup> (n=45)	Other/ Unknown (n=59)
Age					
18-35 years	79 (32.6%)	38 (34.2%)	22 (37.3%)	14 (31.1%)	5 (8.2%)
36-50 years	88 (36.4%)	40 (36.0%)	20 (33.9%)	15 (33.3%)	13 (48.2%)
51-64 years	63 (26.0%)	28 (25.2%)	15 (25.4%)	12 (26.7%)	8 (29.6%)
65+ years	12 (5.0%)	5 (4.5%)	2 (3.4%)	4 (8.9%)	1 (3.7%)
Race					
White	203 (83.9%)	88 (79.3%)	23 (85.2%)	41 (91.1%)	51 (86.4%)
Black	21 (8.7%)	12 (10.8%)	2 (7.4%)	2 (4.4%)	5 (8.5%)
Other	18 (7.4%)	11 (9.9%)	2 (7.4%)	2 (4.4%)	3 (5.1%)
Ethnicity					
Not Hispanic/Latino	226 (93.4%)	107 (96.4%)	25 (92.6%)	43 (95.6%)	51 (86.4%)
Hispanic/Latino	4 (1.7%)	1 (0.9%)	1 (3.7%)	0 -	2 (3.4%)
Unknown	12 (5.0%)	3 (2.7%)	1 (3.7%)	2 (4.4%)	6 (10.2%)
Nursing Home Location					
Urban	165 (68.2%)	77 (69.4%)	14 (51.9%)	32 (71.1%)	42 (71.2%)
Rural	76 (31.4%)	33 (29.7%)	13 (48.2%)	13 (28.9%)	17 (28.8%)
Unknown	1 (0.4%)	1 (0.9%)	0 -	0 -	0 -
Describe your most recent experience of being tested. (Check all that apply)					
Uncomfortable	122 (50.4%)	60 (54.1%)	12 (44.4%)	21 (46.7%)	29 (49.2%)
Easy Process	148 (61.2%)	72 (64.9%)	17 (63.0%)	29 (64.4%)	30 (50.9%)
Fast Process	121 (50.0%)	65 (58.6%)	12 (44.4%)	19 (42.2%)	25 (42.4%)
Painful	34 (14.1%)	15 (13.5%)	4 (14.8%)	6 (13.3%)	9 (15.3%)
Not upsetting at all	26 (10.7%)	16 (14.4%)	2 (7.4%)	3 (6.7%)	5 (8.5%)
Upsetting in some way	17 (7.0%)	7 (6.3%)	1 (3.7%)	3 (6.7%)	6 (10.2%)
Frustrating	15 (6.2%)	5 (4.5%)	2 (7.4%)	3 (6.7%)	5 (8.5%)
Other	5 (2.1%)	1 (0.9%)	0 -	1 (2.2%)	3 (5.1%)
No response	8 (3.3%)	4 (3.6%)	1 (3.7%)	1 (2.2%)	2 (3.4%)
Do you think it is important for nursing home staff to get tested on a regular basis for coronavirus?					
Yes	172 (71.1%)	80 (72.1%)	17 (63.0%)	35 (77.8%)	40 (67.8%)
No	54 (22.3%)	24 (21.6%)	8 (29.6%)	8 (17.8%)	14 (23.7%)
Prefer not to answer	16 (6.6%)	7 (6.3%)	2 (7.4%)	2 (4.4%)	5 (8.5%)
Do you have concerns about getting tested yourself on a regular basis for coronavirus?					
Yes	55 (22.7%)	30 (27.0%)	2 (7.4%)	11 (24.4%)	12 (20.3%)
No	167 (69.0%)	74 (66.7%)	23 (85.2%)	31 (68.9%)	39 (66.1%)
Prefer not to answer	20 (8.3%)	7 (6.3%)	2 (7.4%)	3 (6.7%)	8 (13.6%)
What barriers do you have to testing outside of work? (Check all that apply)					
Time	135 (55.8%)	66 (59.5%)	13 (48.2%)	19 (42.2%)	30 (50.9%)
Cost	106 (43.8%)	50 (45.1%)	10 (37.0%)	23 (51.1%)	23 (39.0%)
Transportation	34 (14.1%)	17 (15.3%)	2 (7.4%)	8 (17.8%)	7 (11.9%)
No Barriers	30 (12.4%)	14 (12.6%)	2 (7.4%)	5 (11.1%)	9 (15.3%)
Other	10 (4.1%)	3 (2.7%)	1 (3.7%)	0 -	6 (10.2%)
Prefer not to answer	27 (11.2%)	10 (9.0%)	4 (14.8%)	4 (8.9%)	9 (15.3%)
Willingness to be tested and vaccinated for coronavirus					



Tested and vaccinated	114 (47.1%)	49 (44.1%)	16 (59.3%)	21 (46.7%)	28 (47.5%)
Tested, but not vaccinated	60 (24.8%)	32 (28.8%)	5 (18.5%)	13 (28.9%)	10 (17.0%)
Not tested, but vaccinated	5 (2.1%)	1 (0.9%)	0 -	1 (2.2%)	3 (5.1%)
Not tested or vaccinated	17 (7.0%)	8 (7.2%)	0 -	3 (6.7%)	6 (10.2%)
Prefer not to answer	46 (19.0%)	21 (18.9%)	6 (22.2%)	7 (15.6%)	12 (20.3%)
Once a coronavirus vaccine is available					
Will wait to get vaccinated	64 (26.5%)	26 (23.4%)	10 (37.0%)	13 (28.9%)	15 (24.4%)
Will get vaccinated as soon as possible	58 (24.0%)	24 (21.6%)	7 (25.9%)	14 (31.1%)	13 (22.0%)
Unsure	43 (17.8%)	24 (21.6%)	3 (11.1%)	6 (13.3%)	10 (17.0%)
Will not get vaccinated	30 (12.4%)	17 (15.3%)	1 (3.7%)	4 (8.9%)	8 (13.6%)
Prefer not to answer	47 (19.4%)	20 (18.0%)	6 (22.2%)	8 (17.8%)	13 (22.0%)

<sup>1</sup>Includes certified nursing assistants, registered nurses, physical/occupational/speech therapists, licensed practical nurses, and physician assistants.

<sup>2</sup>Includes staff involved in providing services such as dietary, activities, housekeeping, and social services.

## Conflicts of Interest

KU is the CEO of Probari, a healthcare start-up designed to disseminate a successful RN based clinical care model in nursing homes.

## Methods Appendix

From June 1 through June 30, 2020, the ISDH planned to test all nursing home staff working within Indiana. NHs had the option of having test kits sent to them by ISDH, on-site testing via ISDH, or submitting test results from other sites. All ISDH tests were collected by nasopharyngeal swabs and were analyzed with PCR. We received data on 44,065 nursing home staff who participated in the June testing.

Of the staff who were tested from June 1 through June 30, 18,802 had unique email addresses, and of those a smaller subset of 4,296 persons were invited to complete the survey, each of whom were  $\geq 18$  years old. The selection of email addresses was dispersed across different staffing roles and nursing home locations throughout the state. A 19-question voluntary survey,

123 created on Qualtrics, was sent to 4,296 nursing home staff members throughout Indiana.  
124 Initially 105 emails bounced back, giving a total of 4191 emails which received the survey. In the  
125 time period of July 21 to July 29, 242 individuals finished the survey, giving a response rate of  
126 5.6% or 5.8% if the 105 bounced emails are taken under consideration. Types of questions  
127 included Likert scale, nominal, closed-ended, and open-ended questions. Responses were  
128 aggregated and analyzed into frequency statistics and represented in a tabular form.